



Research Focus

Exploring the relationship between human behavior and technology

Research at Intel People and Practices



To ensure that future Intel products satisfy people's real world needs, a group of social scientists, designers and engineers within the company explores the human side of technology. The goal of this People and Practices Research team is to gain a deep understanding of how people live and work, and to translate that knowledge into concepts for technology that fit naturally into people's lives.

People and Practices researchers travel the globe to conduct field investigations, using a variety of tools and techniques, from in-depth interviews to observations of people as they go about their daily activities. In the process, they learn how people use technology, and where it helps or hinders them. They also gain valuable insights into potential new computing applications.

The People and Practices Research Lab works closely with Intel researchers and product developers to ensure that research learnings are translated into actions, through the design of new technologies that address the real needs of people. The Lab also collaborates with academic and industry researchers worldwide, through conferences, sponsored projects and other forms of outreach.

Research Agenda

Following is a sample of research in progress.

Ubiquitous and Proactive Computing

We are exploring a variety of potential environments and applications for ubiquitous and proactive computing. Our research is examining relationships among the many participants engaged in a domain of activity, rather than just single user applications. Thinking in terms of entire domains raises issues about how to handle the human touch points in proactive, ubiquitous systems that anticipate our needs and, sometimes, act on our behalf.

The Proactive Health project is investigating computing applications for residential health care for the aging population and their caregivers. Another project is exploring the potential for ubiquitous computing, including the use of sensor networks, in agriculture—specifically, in vineyards. Our research is intended to identify ways to assist the many people who participate in the creation and consumption of products: growers, vineyard managers, field workers, wine investors, shippers and customers. Both of these studies focus on computing in a technology-rich environment with sensor nets, wireless networks, hand-held and notebook computers, and other mobile devices.



Richard Beckwith removes a temperature sensor from its casing in a study of agricultural uses of wirelessly networked sensors.



One of many mobile design concepts developed by People and Practices designers for labs and product groups at Intel.

Mobility

Mobile computing opportunities and challenges have increased with the rapid proliferation of cellular connectivity, wireless networking standards, and new technologies for handset devices.

We have studied a variety of highly mobile user groups, such as teens and "around town" mobile workers. In addition to our research in the U.S., we have conducted field investigations in international markets such as Sweden, Japan, Korea, and the UK. We have developed new application concepts and designed hand-held and mobile form factors that support important mobile activities. The objective of our research is to support Intel's evolving model of computing usage, from the desktop-centric view of the past 20 years to the future model of computing as a complex interplay of many devices.

Next Ten Percent

While roughly 600 million people own or have regular access to a PC and the Internet, 85-90% of the world's population still have no access to connected computing. We are investigating "the next ten percent" of these potential future customers in Asia and Latin America as well as other emerging economies.

Developing computing products to serve the next ten percent and beyond will require new ways of thinking about both technology and business models. In some cases, individual ownership of technology may never be possible—access may be shared, yet still valued. In other situations, as devices become cheaper, as infrastructures improve or new ones are developed, more and more people may begin to gain access. How are the needs of those outside the world's wealthiest communities different than ours? What new types of technologies do they require?



To succeed in the future, the technologies we create will have to fit into worlds that look rather different from our own.

People

Lab Director: **Christine Riley, Ph.D.**

Christine Riley is Director of the People and Practices Research (PaPR) Lab within the Corporate Technology Group (CTG). She is Co-Chair of the Applications, Interfaces and Media Committee of the Intel Research Council, which sponsors applications research in universities. Dr. Riley joined Intel in 1995 and has managed PaPR since it was formed in 1996.



Dr. Riley received an A.B. in Applied Mathematics from Brown University and a Ph.D. in Cognitive Psychology from Princeton University. Prior to joining Intel, she spent 18 years in the telecommunications industry in a variety of research and technical management positions with Bell Laboratories and Bellcore (now Telcordia Technologies). Prior to joining Bell Laboratories, Dr. Riley was Assistant Professor of Psychology at the University of Iowa.

Research Staff



Back row (left to right): John Sherry, Debbie Speaker, Nick Oakley, Scott Mainwaring

Middle (left to right): Christine Riley, Wendy March, Dan Teibel, Ken Anderson, Tim Brooke

Front: Richard Beckwith, Tony Salvador, Eric Dishman, Genevieve Bell, Jenna Burrell

Missing from photo: Steve Barile

About Intel Research

In a future world of proactive computing, billions of tiny, powerful, connected devices throughout the environment will anticipate our needs and take appropriate action on our behalf. With the formation of Intel Research in 1999, Intel began funding research into the emerging and disruptive technologies required to translate this vision into reality.

Intel has initiated several projects in support of proactive computing. A number of strategic research projects are being carried out internally, within Intel's research and development labs. These projects cover a broad range of disciplines, including MEMS, precision biology, ad hoc networks, extreme networked systems, ubiquitous computing, novel storage, live databases, statistical models, computational nanovision, robotics, machine learning, supply chain visualization, distraction-free systems, proactive healthcare, and ethnography.

Complementary research into proactive computing is being conducted externally through the Intel Research Network of labs, an innovative partnering between industry and academia. The labs, located near major universities, are wholly owned and funded by Intel but operate using a uniquely open and collaborative model. Much of the research they generate will be published and shared widely. Currently there are four labs in the network, in Berkeley, Pittsburgh, Seattle and Cambridge, England.

The Intel Research Network of labs builds upon Intel's strong history of research and development, both within the company and through more than 250 funded university projects throughout the world. Intel also supports research institutions through a variety of programs, including Intel forums, visiting faculty collaboration, and joint Intel-university research projects. Intel is an active participant in Sematech, the Semiconductor Research Corporation, and other industry consortia.

For more information about research at Intel, or to inquire about employment opportunities, visit www.intel.com/research.



Intel research and development is a decentralized worldwide network of researchers, scientists and engineers who are pioneering technology innovation and catalyzing cooperation within the computing and communications industry. With a network of over 7,000 technology professionals, Intel can focus on developing breakthroughs in a variety of areas, including silicon technology and manufacturing, microarchitecture and circuits, computing platforms, communications and networking, software technology and new usage models. For more than 30 years, the company's research and development activities have continually expanded the possibilities for enhancing people's lives and work through computing and communications.

For more information, visit:
<http://www.intel.com/labs>.

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